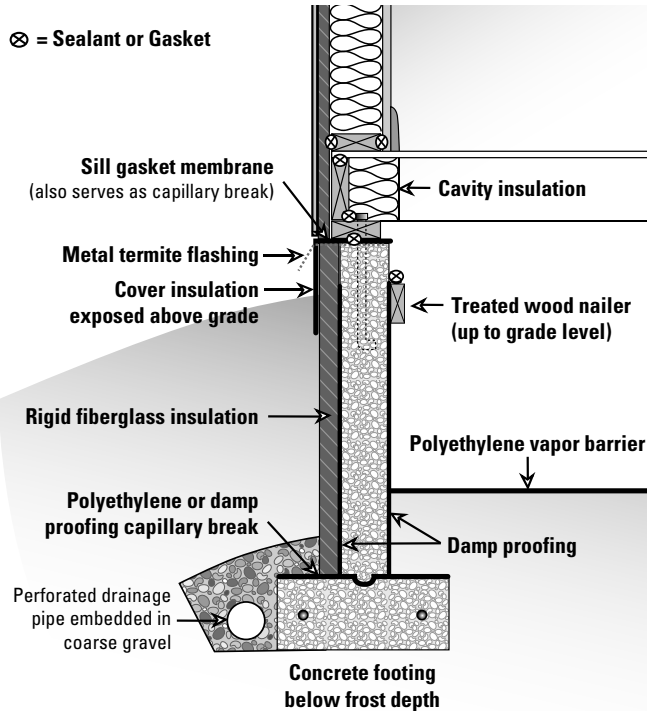




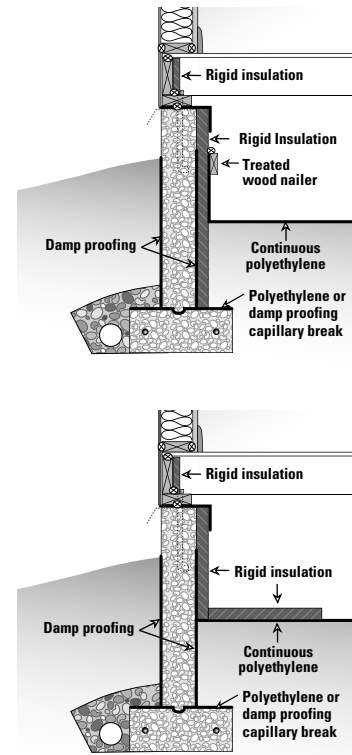
BASEMENT & CONDITIONED (UNVENTED) CRAWLSPACE INSULATION

Building Tips

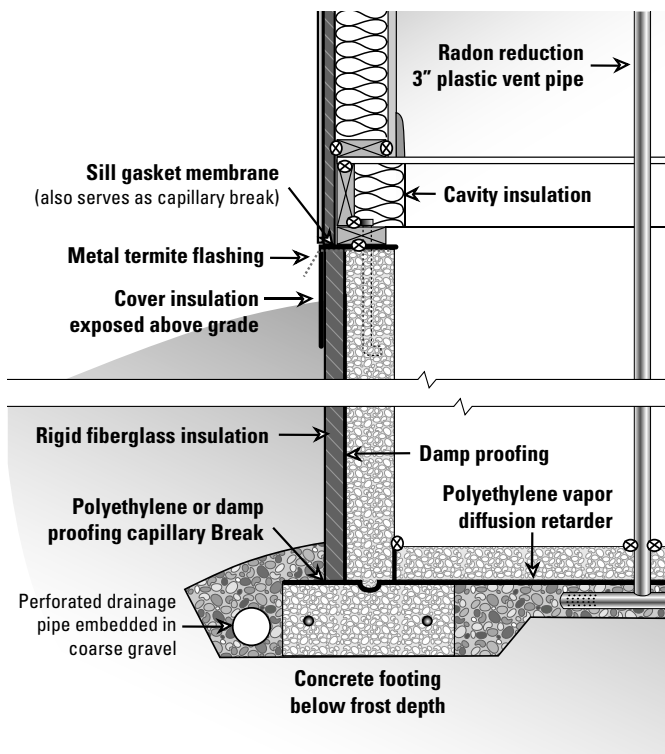
EXTERIOR CRAWLSPACE INSULATION



INTERIOR CRAWLSPACE INSULATION

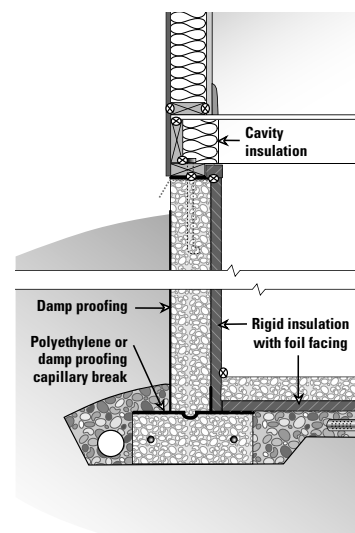


EXTERIOR BASEMENT INSULATION



If depth does not extend two feet below grade, place remaining insulation horizontally along the ground.

INTERIOR BASEMENT INSULATION



See more information on the following page.

Installation Tips

- Exterior and interior insulation approaches may be combined to provide needed insulation levels.
- Properly installed exterior rigid fiberglass insulation provides the best moisture management properties of the available insulation types.
- Interior nailing strips for finished walls should be installed over rigid foam (extruded polystyrene is more moisture tolerant than expanded polystyrene) insulation so that the foam is sandwiched between the nailing strip and the basement wall.
- Seal joints with adhesive or mastic on interior foam insulation applied directly to foundation walls.
- If interior blanket or batt insulation is used, it should be combined with exterior or interior rigid insulation attached directly to the foundation wall. The blanket or batt insulation should be unfaced or have a facing that allows moisture to pass through, and should be used in a conditioned basement. The drywall should be tightly air sealed to keep interior moist air from condensing on the foundation wall.
- Foil-faced rigid insulation is a good interior insulation choice for unfinished basements.

Crawlspace and Basement Foundation System Moisture and Air Leakage Control

- Keep all untreated wood materials away from earth and concrete contact.
- Design the house structure with overhangs, gutters, drainage planes, and flashing to shed rainwater and conduct it away from the house.
- Slope the earth away from the house and ensure that no irrigation strikes near the foundation.
- Damp proof all below grade portions of the exterior foundation wall to prevent the absorption of ground water.
- Use a sill gasket for air sealing
- Install a protective shield such as metal flashing, plastic L bracket, or a membrane (such as EPDM* flexible roofing material) to block capillary water wicking into the wall from the foundation. The protective shield may also serve as a termite shield.
- Crawlspaces require a foundation drain when the crawlspace floor is located below grade. Always install a foundation drain in basements. Install a foundation drain alongside the footing (not above it). The drain should rest in a bed of coarse gravel (no fines) that slopes away from the foundation and is covered with filter fabric.
- Exterior rigid fiberglass insulation provides a drainage plane that will channel water to the foundation drain and relieve hydrostatic pressure.
- Exterior foundation wall insulation requires a protective coating at above-grade applications. Examples of protective coverings for exterior, above-grade insulation include flashing, fiber-cement board, parging (stucco type material), treated plywood, or membrane material (EPDM* flexible roofing).
- Note that some code jurisdictions may require a gap between exterior insulation and wood foundation elements to provide a termite inspection area.
- Install damp proofing or a polyethylene sheet over the footing to block capillary water wicking into the foundation side wall.
- Install a capillary break and vapor retarder under slabs and basement floors consisting of at least a 6-mil polyethylene sheet or continuous rigid foam insulation approved for below grade applications, on top of four to six inches of coarse gravel.
- Install radon control measures (check local requirements and EPA recommendations).

*EPDM stands for Ethylene Propylene Diene Monomer.

Sources & Additional Information

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